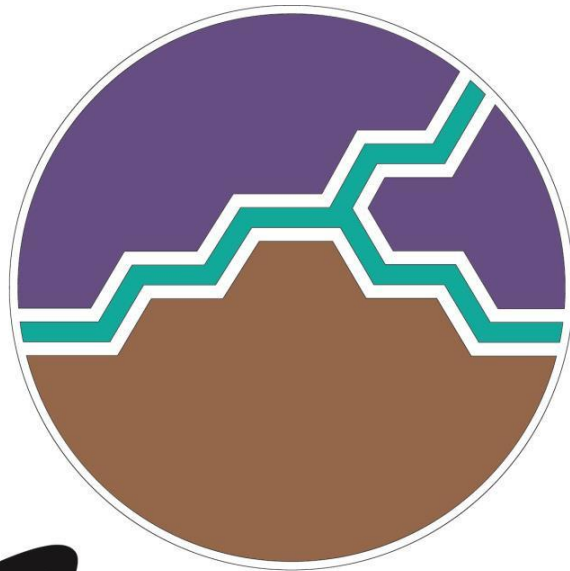


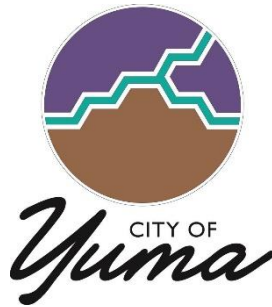
City of Yuma

**SUPPLEMENT TO
MARICOPA ASSOCIATION OF GOVERNMENTS
UNIFORM STANDARD SPECIFICATIONS
For
PUBLIC WORKS CONSTRUCTION**



CITY OF
Yuma

Issued August 1, 2021



2021 CITY OF YUMA SUPPLEMENT TO THE 2020 EDITION OF THE MAG UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION

The 2021 City of Yuma Supplement to the Maricopa Association of Governments (MAG) Uniform Standard Specifications for Public Works Construction, 2020 Edition and current revisions thereto, shall be considered a Supplement to MAG Uniform Standard Specifications as published by the Maricopa Association of Governments.

The Specifications should be thoroughly reviewed by the professional engineers and architects in responsible charge prior to incorporating them into project plans and specifications. The Specifications are not a substitute for good engineering judgment. Unique conditions will arise that are outside of the scope of this document. Professional engineers and architects are required to use their judgment to develop project specific Technical Specifications to properly adjust the MAG Standard Specifications and these Supplementary Specifications to best meet project/site-specific needs. Not all Specifications contained herein will apply to all projects.

All public works construction contracts advertised and all permits issued after the date of issue shall be governed by this 2021 edition.

A copy of this 2021 edition is available for review and download on the City of Yuma Website at the following address:

<https://www.yumaaz.gov/government/engineering/design-construction-management>

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N/A – No change to MAG Specifications

CONSTRUCTION SPECIFICATIONS

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SECTION 101 – ABBREVIATIONS AND DEFINITIONS

If there are any discrepancies between this document and the City code, the City code will govern.

SUBSECTION 101.1 ABBREVIATIONS add the following:

COY – City of Yuma

YC – Yuma County

SUBSECTION 101.2 DEFINITIONS AND TERMS add the following definition:

Solicitation: The book or pamphlet pertaining to a specific project, containing proposal forms, technical specifications and other information necessary for and pertinent to the preparation of the proposal or bid.

REPLACE THE FOLLOWING DEFINITIONS:

County: Yuma County, organized and existing under and by virtue of the laws of the State of Arizona

Contracting Agency: The City of Yuma

Major Item: The total of any item of work and/or materials specified in the bid form that exceeds the amount established in Table 109-1.

SECTION 102 – BIDDING REQUIREMENTS AND CONDITIONS

SUBSECTION 102.2 CONTENTS OF PROPOSAL PAMPHLET delete subsection in its entirety and replace with the following:

102.2 CONTENTS OF BID SOLICITATION

The prospective bidder may examine the solicitation through <https://yumaaz.bonfirehub.com>

The solicitation will state the location of the contemplated construction; give the description of the various quantities of work to be performed or materials to be furnished, and have a bid form of pay items for which unit bid prices are invited. In addition, it will state the form and amount of the proposal guarantee, the time in which the work shall be completed and include additional instructions not included in these specifications.

The plans, the standard specifications, the standard details, the technical specifications, the contracting agency's supplements to the standard specifications, the general conditions, the supplementary conditions, and all supplementary documents are essential parts of the contract, and a requirement occurring in one is as binding as though occurring in all. They are intended to be complementary and to describe and provide for a complete work. In a case of a discrepancy or conflict, the order in which the various documents shall govern is as follows, from highest to lowest: addenda, technical specifications, plans, agency's supplements to the standard specifications, agency's supplements to the standard details, supplementary conditions, general conditions, standard specifications and standard details.

Each and every provision of law and clause required by law to be inserted in the contract shall be deemed to be inserted herein, and the contract shall be read and enforced as though it were included herein.

SUBSECTION 102.6 SUBCONTRACTORS LIST delete subsection in its entirety and replace with the following:

The list of subcontractors shall be provided in the bid form. The bidder shall list the firm name and business address of each specialty subcontractor to whom the bidder proposes to subcontract any portion of the work. The bidder shall only one firm name for each category.

The bidder may list itself to perform one or more of the listed categories of work for which he has any requisite State licenses.

SUBSECTION 102.8 PROPOSAL GUARANTEES delete subsection in its entirety and replace with the following:

As required by A.R.S. § 34-201, as amended, each bid must be accompanied by an uploaded image of a certified check, cashier's check, or surety bond payable to the City of Yuma for at least ten percent (10%) of the total bid price as a guarantee that the bidder will enter into a contract to perform the Project in accordance with the bid documents.

The lowest bidder shall be required to deliver their bid guarantee instrument to the City of Yuma within ten (10) days after the Notice of Intent to Award.

If a surety bond is used, the surety bond shall be executed solely by a surety company or companies holding a certificate of authority to transact surety business in the State of Arizona issued by the Director of the Department of Insurance. The surety bond shall not be executed by an individual surety or sureties. In addition, said company or companies shall be rated "Best A-" or better, as currently listed in the most recent Best Key Guide, published by the A.M. Best Company

SUBSECTION 102.9 SUBMISSION OF PROPOSAL delete subsection in its entirety and replace with the following:

Proposals (Bid) and bid guarantee (Bid Bond) must be received through the City of Yuma Bonfire procurement portal, in accordance with the instructions provided, by the date and time specified in the solicitation or as indicated in addenda.

Any bid received after the stated deadline identified (unless changed by addendum), will not be accepted and will be rejected by the procurement portal. No oral, physically delivered or electronically transmitted bid will be considered.

SUBSECTION 102.10 WITHDRAWAL OR REVISION OF PROPOSAL delete subsection in its entirety and replace with the following:

Once a bid has been submitted with the Contracting Agency, the bid is deemed final and may not be modified. A bid may be withdrawn provided the bidder's request is received by the Contracting Agency, in writing, before the time specified for opening bids.

SUBSECTION 102.11 PUBLIC OPENING OF PROPOSALS delete subsection in its entirety and replace with the following:

Bids received will be opened and publicly read aloud at the date and time and location specified in the solicitation, unless changed by addenda. The time/date stamp in the procurement portal will be used to record the official time of receipt.

SUBSECTION 102.13 SUCCESSFUL BIDDERS delete subsection in its entirety and replace with the following:

Unless otherwise specified in the solicitation, the successful bidder may obtain one (1) set of plans and special provisions, for the project from the Contracting Agency, at no cost, and electronic access to all appropriate files.

SECTION 103 – AWARD AND EXECUTION OF CONTRACT

SUBSECTION 103.1 CONSIDERATION OF PROPOSAL delete last paragraph in its entirety

SUBSECTION 103.2 RETURN OF PROPOSAL GUARANTEE delete subsection in its entirety and replace with the following:

All bid guarantees will be returned immediately (except Bid Bonds) after the contract documents have been executed by all parties. If a check has been received in lieu of a bid bond, the City of Yuma will return the check, or issue a check to refund the Contractor. Bid bonds will be kept in bid file.

SUBSECTION 103.6.1 GENERAL (A) MINIMUM LIMITS OF LIABILITY delete subsection in its entirety and replace with the following:

All insurance and liability requirements shall be as specified in the City of Yuma's contract, as amended by any supplementary documents.

SECTION 104 – SCOPE OF WORK

SUBSECTION 104.1.1 GENERAL delete subsection in its entirety and replace with the following:

The Contractor shall perform all work necessary to complete the contract in a satisfactory and acceptable manner in full compliance with the plans, specifications and terms of the contract.

In the event a conflict exists between Contract Documents the order of precedence listed in descending order shall be as follows:

- Change Orders
- Addenda
- Technical Specifications
- Project Plans/Drawings
- City of Yuma Supplement to the MAG Uniform Standard Specifications for Public Works Construction
- Supplementary Conditions
- General Conditions
- MAG Uniform Standard Specifications for Public Works Construction
- City of Yuma Standard Detail Drawings

Unless otherwise specified in the technical specifications, the Contractor shall furnish all labor, materials, equipment, transportation, utilities, services and facilities required to perform all work for the construction of the project within the time specified.

SUBSECTION 104.1.4 CLEANUP AND DUST CONTROL delete third paragraph in its entirety and replace with the following:

The Contractor shall take whatever steps, procedures or means required preventing any dust nuisance due to the Contractor's construction operations. The dust control measures shall be maintained at all times to the satisfaction of the Engineer and in accordance with the requirements of the Yuma County Air Quality Rules and Regulations.

SECTION 105 – CONTROL OF WORK

SUBSECTION 105.2 PLANS AND SHOP DRAWINGS delete the third paragraph of the subsection in its entirety and replace with the following:

The Contractor shall submit each shop drawing, product data or mix design to the Engineer for review in the manner prescribed by the contracting agency. Each submittal shall be numbered sequentially and shall be submitted in accordance with the schedule established in conjunction with the Contracting Agency so as to cause no delay in the work schedule. The Contractor shall certify, by stamp or letter, that the Contractor has reviewed and approved the submittal and that the submittal conforms to the requirements of the contract documents. If this certification is not included, the submittal will be returned without action.

SUBSECTION 105.8 CONSTRUCTION STAKES, LINES AND GRADES delete subsection in its entirety and replace with the following.

The Contractor shall provide all Construction Staking on the Project.

The basic reference lines, bench marks and control points from which the Contractor shall establish all points and controls needed to construct the Project are identified in the Plans.

Construction Staking shall consist of performing all Construction Staking essential for the control and completion of the Project, in accordance with the specifications and in conformity with the lines, grades, and details shown on the plans or as established by the Engineer. The Contractor shall establish and lay out the necessary project control points, and shall perform all staking necessary to properly complete and control the work.

Using the data and information provided in the plans, the Contractor shall verify the accuracy of the plans by checking the vertical and horizontal alignments and the plan details. This verification shall be accomplished prior to starting any construction operations and, as a minimum, shall include the verification of all elevations, grades, stationing, distances, offsets, dimensions and any other information shown on the plans.

Any errors, discrepancies or omissions discovered by the Contractor shall immediately be brought to the attention of the Engineer.

SECTION 106 – CONTROL OF MATERIALS

SUBSECTION 106.2 SAMPLES AND TESTS OF MATERIALS modify to add the following subsection:

106.2.3 Sampling and Testing Requirements: For quality control purposes, the Contractor shall provide and pay for all control of materials services including material sampling and testing. Samples shall be taken under the direction of the City or its authorized representative. Testing shall be performed by an independent testing laboratory, pre-approved by the City or its authorized representative, under the supervision of a professional civil or geotechnical engineer registered in the State of Arizona. Each report shall indicate the location at which the test was made, the date of the test, type and source of material tested, test designation being used and the name of the person who performed the test. The Contractor shall pay for any retesting as a result of a failed test. Note that the City of Yuma may perform Quality Assurance testing, at the City's expense, on any material used on a City project. See Table 106.2.3 on page 106-3 for additional sampling and testing requirement information.

(A) Geotechnical Tests: A minimum 24 hour notice is required to schedule inspections and tests. All tests shall be conducted by a certified geotechnical testing lab, provided for by the Contractor or developer/owner, at their cost. The City does not provide a geotechnical testing service. Sufficient testing shall be done to adequately verify the required densities and tolerances. The location and frequency of tests shall be per MAG and as further directed by the City. All reports and test results shall be submitted to the City for review and acceptance. Acceptance of and/or meeting the required minimum test standards are mandatory in continuing on to the next phase of work. All initial Geotechnical field test results shall be provided to the City within two (2) business days. Written final reports shall be delivered to the City within two (2) weeks of the tests being taken.

(B) Aggregate Materials for Pipe Bedding/Backfill and Pavement Replacement: The laboratory shall collect the sample from the proposed material source and submit test results for acceptance. The laboratory report shall identify the source and include gradation of the material, plasticity index, liquid limit and percentage of water. If more than one material source is proposed for acceptance, the Contractor shall pay for the necessary test to confirm the suitability of the additional sources.

(C) Trench Compaction Tests: The Contractor shall excavate the compacted backfill where directed by the City or its authorized representative for the purpose of conducting density tests as outlined in the testing requirements. The cost of all excavation, including backfill and re-compaction, shall be the Contractor's responsibility. The materials being compacted shall have the densities outlined in the respective sections of the specifications. The City or its authorized representative will choose the location and depth for the in-place density tests. If any test made should fail to pass, the area must be reworked and one additional test must be taken at the Contractor's expense. It shall be the responsibility of the Contractor to accomplish the required backfill compaction and to control his operations by providing additional testing as necessary to verify and confirm that the Contractor is complying with the requirements of the compaction specifications. The Contractor shall determine the required optimum moisture content and control this moisture accordingly.

(D) Poured In Place Concrete: The consistency of the concrete shall be determined and regulated on the basis of the slump test as described by ASTM C-143. Slump tests shall be provided by the Contractor throughout the progress of the project. Concrete shall be of the class and strength indicated on the contract plan drawings or as otherwise directed by these specifications. Not less than four (4) cylinder specimens shall be made by the Contractor for each 50 cubic yards of each class of concrete with a minimum of four (4) specimens for each class placed or not less than four (4) specimens for each half-day of placement. Specimens shall be tested in accordance with ASTM C-42. One (1) cylinder shall be tested at 7 days. The other two cylinders tested at 28 days, Hold One (1) at 60 days if 28 day results do not meet specification. Retesting as a result of failure shall be done at the Contractor's expense.

(E) Aggregate Base Materials Compaction Tests: One (1) compaction test will be required on the compacted base material every 500 feet of pavement or fraction thereof. Areas of less than 500 feet in length will require a minimum of two (2) tests. The City or its authorized representative will choose the location and depth of in-place density tests. If any test made should fail, the area must be reworked and two (2) additional tests shall be taken at the Contractor's expense. The compacted base material shall be compacted to 100 percent of maximum density for the full depth when tested in accordance with MAG Specifications Section 301.3 and 310.2. Aggregate base material shall not be placed on subgrade until final compaction tests of the subgrade have confirmed that the subgrade meets the compaction requirements of these specifications.

(F) Asphalt Concrete Pavement Testing: Asphalt pavement shall be taken in accordance with MAG Standard Specification Section 321. Any associated additional testing costs shall be the Contractor's responsibility.

TABLE 106-2.3 - CITY OF YUMA SAMPLING AND TESTING REQUIREMENTS

For Contractor QC In accordance with Section 105: Control of Work, and Section 106 Control of Materials

MAG Section / COY Supplement	Tests Required	Sample Point	Minimum Frequency
SECTION 210 BORROW EXCAVATION	Gradation, PI, proctor, density, compaction, optimum moisture	In-place	One per day or per 1500 feet, whichever is more frequent.
SECTION 301 SUBGRADE PREPARATION	Gradation, PI, proctor, density, compaction, optimum moisture	Roadway, under curb	One per soil type, and as needed. <u>Compaction:</u> For roadway construction, a minimum of one field density test shall be performed for each pavement lift per each 300 feet, per lane. For driveways, one test every 500 square feet. For other applications, a minimum of one field density test shall be performed for each 800 square yards placed.
SECTION 601 TRENCH EXCAVATION, BACKFILLING AND COMPACTION	Gradation, PI, proctor, density, compaction, optimum moisture	In-place	One per soil type. One compaction test every 500 feet of trench length, per 2-foot lift.
SECTION 206 STRUCTURE EXCAVATION AND BACKFILL	Gradation, PI, proctor, density, compaction, optimum moisture	Stockpile, in-place	One per source, and as needed. One compaction test per 2-foot lift.
SECTION 310 PLACEMENT AND CONSTRUCTION OF AGGREGATE BASE COURSE	Gradation, PI, proctor, density, compaction, optimum moisture abrasion, fractured faces, aggregate partials	Source, crusher belt, stockpile, grade (windrow)	One per source at start of production, then as material changes. One gradation test per 2000 tons placed, or minimum one per shift. <u>Compaction:</u> For roadway construction, a minimum of one field density test shall be performed for each placement lift per 500 feet per lane. For other aggregate base course applications, a minimum of one field density test shall be performed for each 800 square yards placed.
SECTION 321 PLACEMENT AND CONSTRUCTION OF ASPHALT CONCRETE PAVEMENT	% Asphalt, gradation, air voids, Marshall density, moisture content, pavement thickness, compaction	Roadway (see MAG 321.10.1)	A pavement lot shall be one day's production. Each lot shall be divided into sub-lots of 500 tons, or any fraction thereof.
SECTION 340 CONCRETE CURB, GUTTER, SIDEWALK, CURB RAMPS, DRIVEWAY AND ALLEY ENTRANCE	Slump, temperature	Discharge	One sample every 50 cubic yards, or per placement day. One sample is defined as 4 cylinders

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SECTION 107 – LEGAL REGULATIONS AND RESPONSIBILITY TO PUBLIC

SUBSECTION 107.5 SAFETY, HEALTH AND SANITATION PROVISIONS delete first paragraph in its entirety and replace with the following:

The Contractor shall provide and maintain in a neat, sanitary condition such accommodations for the use of his employees as may be necessary to comply with the requirements and regulations of the Arizona State Department of Health or as specified by the Yuma County Health Department, Sanitary Code.

SUBSECTION 107.5 SAFETY, HEALTH AND SANITATION PROVISIONS add the following subsection:

107.5.2 NOISE AND AIR POLLUTION

Noise Pollution - the contractor will inform the Engineer of any operations that will create consistent sound level/s in excess of 90 decibels (A scale) at or around the work site.

Air Pollution - the contractor will inform the Engineer of any potential air contamination that may be generated by the contractors(s) operation(s) such as dust, fumes, vapors, generators, etc. The contractor will take all reasonable precautions to minimize emissions of any air contaminant(s).

SECTION 107.6.3 CONSTRUCTION NOTICE add the following subsection:

The Contractor, at least seven days prior to starting any construction activities or phases, shall distribute Construction Notice Flyers to all affected residences, businesses and other interests in the immediate vicinity of the Project. The Contractor shall furnish a copy of the Construction Notice to the Engineer for approval prior to issuing the notice.

The Construction Notice shall include the Project name and description, the Contractor's name, a brief description of the work, the anticipated duration of the work in the immediate area, and the name(s) of the Contractor's contact(s) with phone number(s) where the Contractor can be contacted 24 hours, seven days per week.

The Contractor shall maintain a written log of all public inquiries and concerns, including a brief description of the concern, how the issue was resolved, and the day and time of the resolution. Copies of the written log shall be available for review as requested by the Engineer.

All costs associated with the Construction Notices shall be considered incidental to completion of the Project, and no direct payment will be made for this work.

SUBSECTION 107.7 BARRICADES AND WARNING SIGNS delete last paragraph in its entirety and replace with the following:

The Contractor shall erect warning signs in advance of any place on the project where operations may interfere with the use of the road by traffic, and at all intermediate points where the new work crosses or coincides with an existing road. Such warning signs shall be constructed and erected in accordance with the Manual on Uniform Traffic Control Devices (MUTCD) adopted by the Contracting Agency's Traffic Engineering Department, which is hereby made a part of these specifications.

SUBSECTION 107.9 PROTECTION AND RESTORATION OF PROPERTY AND LANDSCAPE delete third and fifth paragraphs in their entirety and replace with the following:

When or where any direct or indirect damage or injury is done to public or private property by or on account of any act, omission, directive, neglect, or misconduct in the execution of the work, or in consequence of the non-execution thereof by the Contractor, the Contractor shall restore, at no cost to the Contracting Agency, such property to a condition similar or equal to that existing before such damage or injury was done, by repairing, rebuilding, or otherwise restoring as may be directed, or the Contractor shall make good such damage or injury in an acceptable manner. Such damage will include but not be limited to landscaped areas. The Contractor shall regrade the disturbed area as directed and restore the surface material to match existing in type and quality.

The Contractor shall not dump spoil or waste material on private property without first obtaining from the owner written permission for such dumping. All such dumping shall be in strict conformance with the requirements of the Contracting Agency.

SECTION 108 – COMMENCEMENT, PROSECUTION AND PROGRESS

SUBSECTION 108.2 SUBLETTING OF CONTRACT add the following:

(F) The contractor shall submit affidavits of payment from each sub-contractor and supplier before final payment is made.

SUBSECTION 108.5 LIMITATION OF OPERATIONS delete second paragraph in its entirety and replace with the following:

All traffic affected by the construction will be regulated in accordance with the Manual on Uniform Traffic Control Devices (MUTCD), adopted by the Contracting Agency.

SUBSECTION 108.12 MEETINGS add the following subsection:

108.12.1 Pre-Construction Meeting

The Contractor shall attend a Pre-Construction Project Meeting on the date and time scheduled by the Engineer. The Contractor, at the Pre-Construction Meeting, shall submit contact information for its responsible parties, and all documents required in the contract documents for review and acceptance or approval.

108.12.2 Post-Construction Meeting

The Contractor shall attend a Post-Construction Project Meeting on the date and time as scheduled by the Engineer. The Engineer will schedule the meeting no later than 14 days after Contractor addresses all issues on the Substantial Completion deficiency list (punchlist).

At the Post-Construction Meeting the Contractor shall provide, if not already submitted, all closeout documents required on the closeout checklist.

108.12.3 Construction Progress and Public Meetings

The Contractor shall attend all Project Public Information Meetings and all Construction Progress Meeting as scheduled by the Engineer.

Unless otherwise determined by the Engineer, Weekly Construction Progress Meetings will be conducted during the life of the Project. The Contractor, at the Progress Meetings, shall provide short interval schedules, quality control testing results, and other documentation as required by the contract documents.

All costs associated with the project related meetings shall be considered incidental to completion of the Project, and no direct payment will be made for this work.

SECTION 109 – MEASUREMENTS AND PAYMENTS

SUBSECTION *109.7 PAYMENTS FOR BOND ISSUE AND BUDGET PROJECTS (A)(1) delete subsection 109.7 (A)(1) in its entirety and replace with the following:

(1) No payment will be processed until the material or equipment has been observed, inspected, reviewed or verified by the Contracting Agent representative. Only the material or equipment meeting the requirements of the plans and specifications will be paid. Payment for material or equipment does not constitute final acceptance.

[109-1](#)

SECTION 110 – NOTIFICATION OF CHANGED CONDITIONS AND DISPUTE RESOLUTION

SUBSECTION 110.3.1 GENERAL add the following information to each

- Level I. (Representative reviewed by: *Project Manager*)
- Level II. (Representative reviewed by: *Assistant Director of Engineering*)
- Level III. (Representative reviewed by: *City Engineer*)

SUBSECTION 110.3.3 PROCESS delete the first two paragraphs in their entirety and replace with the following:

The Contracting Agency's Level I Representative will render a written decision regarding the matter in dispute within five (5) working days of receipt of the Contractor's notification that the dispute resolution process should begin.

The Contractor shall, upon receipt of the decision by the Level I Representative, either accept or reject the decision in writing. If the Contractor does not reject the Level I Representative's decision within five (5) working days of its receipt, the Contractor will be deemed to have accepted the decision, the dispute will be considered withdrawn from the administrative process, and there will be no further remedy.

SUBSECTION 110.5 DISPUTE REVIEW BOARD delete this subsection in its entirety.

CONSTRUCTION SPECIFICATIONS

PART 300 - STREETS AND RELATED WORK

Section Title	COY
301 Subgrade Preparation	301-1
303 Pervious Concrete Base Course	N/A
306 Mechanically Stabilized Subgrade-Geogrid Reinforcement	N/A
309 Lime Stabilization or Modification of Subgrade	N/A
310 Placement and Construction of Aggregate Base Course	310-1
311 Placement and Construction of Cement Treated Subgrade	N/A
312 Cement Treated Base	N/A
315 Bituminous Prime Coat	N/A
317 Asphalt Milling	N/A
320 Road-mixed Surfacing	N/A
321 Placement and Construction of Asphalt Concrete Pavement	321-1
322 Decorative Asphalt	N/A
322 Placement of Pervious Concrete	N/A
324 Portland Cement Concrete Pavement (PCCP)	N/A
325 Placement and Construction of Asphalt-Rubber Asphalt Concrete	N/A
326 Placement and Construction of Polymer Modified Asphalt Concrete	N/A
327 Hot In-Place Recycling	N/A
329 Tack Coat	329-1
330 Asphalt Chip Seal	N/A
331 Placement and Construction of Asphalt Emulsion Micro-surfacing Treatments	N/A
332 Placement and Construction of Asphalt Emulsion Slurry Seal Treatments	N/A
333 Fog Seal Coats	N/A
334 Preservative Seal for Asphalt Concrete	N/A
335 Placement and Construction of Hot Asphalt-Rubber Seal	N/A
336 Pavement Matching and Surfacing Replacement	336-1
337 Asphalt Pavement Crack Sealing and Crack Filling	N/A
340 Concrete Curb, Gutter, Sidewalk, Curb Ramps, Driveway and Alley Entrance	340-1
342 Interlocking Concrete Paver Installations	N/A
343 Exposed Aggregate Paving	N/A
345 Adjusting Frames, Covers and Valve Boxes	345-1
350 Removal of Existing Improvements	350-1
355 Utility Potholes-Keyhole Method	N/A
360 Telecommunications Installation	N/A

SECTION 301 – SUBGRADE PREPARATION

SUBSECTION 301.3 RELATIVE COMPACTION delete section (B) in its entirety and replace with the following:

(B) Below detached sidewalk not subject to vehicular traffic 95%

ADD THE FOLLOWING:

Compaction tests shall be performed every 300 linear feet per lift for roadways, curb and gutter and sidewalks. Compaction test every 500 square feet for driveways.

[301-1](#)

SECTION 310 – PLACEMENT AND CONSTRUCTION OF AGGREGATE BASE COURSE

SUBSECTION 310.3 COMPACTION delete item (C) from this section in its entirety.

SUBSECTION 310.5 PAYMENT delete subsection in its entirety and replace with the following:

Payment for aggregate base course will be made on the basis of the contract unit price per unit of measure specified in the project documents unless an alternate basis of payment is provided in the proposal.

[310-1](#)

SECTION 321 – PLACEMENT AND CONSTRUCTION OF ASPHALT CONCRETE PAVEMENT

SUBSECTION 321.6 MIX PRODUCTION delete first paragraph in its entirety and replace with the following:

All materials shall be proportioned by weight in a hot mix asphalt plant in the proportions required by the mix design to provide a homogenous and workable mass. All measuring devices shall be calibrated at least annually by a technician licensed by the Arizona Bureau of Weights & Measures. Mixing plants shall conform to the requirements of AASHTO M-156, except as modified herein. If WMA technology is being used, any equipment associated with the production of hot mix asphalt shall be calibrated and in proper working order according to the WMA equipment specifications. If there are any deviations in the production or compacting temperatures of the hot mix asphalt with WMA technology, the mix design shall state the difference.

[321-1](#)

SECTION 329 – TACK COAT

SUBSECTION 329.7 PAYMENT delete subsection in its entirety and replace with the following:

No separate payment shall be made for emulsified bituminous tack coat, the cost of which shall be considered incidental to the asphalt concrete pavement.

[329-1](#)

SECTION 336 – PAVEMENT MATCHING AND SURFACING REPLACEMENT

SUBSECTION 336.1 DESCRIPTION delete second paragraph in its entirety and replace with the following:

Asphalt concrete roadway pavement replacement shall be constructed in accordance with Type A, B and T-Top of City of Yuma Construction Standard Details 5-070, 5-075, 5-080, 5-081, and Type C, D and E of MAG Standard Detail 200-1 and as indicated on the plans or in the special provisions.

SUBSECTION 336.3 TYPES AND LOCATIONS OF PAVEMENT AND SURFACING REPLACEMENT delete first paragraph in its entirety and replace with the following:

Normally, the type of pavement replacement and backfill required will be noted on the plans or specified in other portions of the contract documents and construction will be in accordance with Detail 200-1 and 200-2 for type C, D and E and City of Yuma Standard Details 5-070, 5-075, 5-080, 5-081 for types A, B and T-Top. If a type is not noted on the plans or specified in the special provisions, the following criteria will govern:

[336-1](#)

SECTION 340 – CONCRETE, CURB, GUTTER, SIDEWALK, CURB RAMPS, DRIVEWAY AND ALLEY ENTRANCE

SUBSECTION 340.3.1 SUBGRADE PREPARATION delete second paragraph and table 340.1 in their entirety.

SUBSECTION 340.3.4.1 EXPANSION JOINTS delete third paragraph in its entirety and replace with the following:

Sidewalk, curb, and gutter expansion joints shall be installed at all radius points, at both sides of each driveway, at both sides of each alley entrance. The maximum distance between expansion joints shall be 20 feet.

[340-1](#)

SECTION 345 – ADJUSTING FRAMES, COVERS, VALVE BOXES, METER BOXES AND PULL BOXES

SUBSECTION 345.4 ADJUSTING VALVE BOXES delete section in its entirety and replace with the following:

Valve boxes shall be adjusted in accordance with City of Yuma standard drawing 5-075 for valve box installations.

SUBSECTION 345.5 ADJUSTING MANHOLE AND VALVE COVERS WITH ADJUSTMENT RINGS delete subsection in its entirety and replace with the following:

Traffic shall not be allowed on the concrete collars until the concrete has reached a minimum compressive strength of 3000 psi.

[345-1](#)

SECTION 350 – REMOVAL OF EXISTING IMPROVEMENTS

SUBSECTION 350.2.1 UTILITIES delete the last paragraph in its entirety and replace with the following:

When Utilities are encountered that are not shown on the plans, the Engineer shall be notified and such utilities shall be included in the As-built drawings.

[350-1](#)

CONSTRUCTION SPECIFICATIONS

PART 400 – RIGHT-OF-WAY AND TRAFFIC CONTROL

Section Title

COY

401	Traffic Control	401-1
405	Survey Monuments	405-1
410	Precast Safety Curbs	N/A
415	Flexible Metal Guardrail	N/A
420	Chain Link Fences	N/A
424	Parkway Grading	N/A
425	Topsoils	N/A
430	Landscaping and Planting	N/A
440	Sprinkler Irrigation System Installation	N/A

SECTION 401 – TRAFFIC CONTROL

SECTION 401.2.1TYPE III (HIGH INTENSITY) REFLECTIVE SIGN SHEETING add the following subsection:

The Contractor shall use Type III High Intensity Sheeting on all temporary Traffic Control Signs and Detour Signs that are placed on this Project. The Sheeting shall comply with the ASTM D4956 designation for Type III High Intensity Retroreflective Sheeting Material.

SECTION 401.5 GENERAL TRAFFIC REGULATIONS add the following:

The Contractor shall inspect all Traffic Control Devices at least twice daily to assure that they are in compliance with the approved Traffic Control Plan and to ensure that they are in good condition. The Traffic Control Plan and Devices shall be inspected at the start of each work day and during holidays, weekends and other non-working days. The Contractor shall keep a log of all inspections and any corrective action taken, and the log shall be available for review upon request by the Engineer or the Engineer's representative.

The current progress payment for Traffic Control bid item will not be processed until all corrective actions have been taken to the satisfaction of the Engineer.

The Contractor shall provide the name and telephone number of the person(s) assigned to inspect and maintain the Traffic Control Plan and Devices to the Engineer and they shall be available and on-call 24 hours a day.

The Contractor is further advised that during construction the Traffic Engineer may determine that the in-place Traffic Control must be modified or that additional traffic control is required. Any such modifications or additions to the existing Traffic Control shall be accomplished by the Contractor at no additional cost.

SECTION 401.7 PAYMENT add the following:

Payment, as requested by the Contractor for this item, will be effected as follows:

1. 30% of the bid item amount will be paid with the first invoice.
2. 30% of the bid item amount will be paid with the second invoice.
3. 40% of the bid item amount will be paid with the Final Invoice.

SECTION 405 – SURVEY MONUMENTS

SECTION 405.3 CONSTRUCTION add the following:

The Contractor, under the supervision of the City of Yuma’s Registered Land Surveyor (City Surveyor), shall set the Survey Monuments in accordance with the plans and with the following City of Yuma Construction Standard Detail Drawings, as applicable:

Standard No. 4-005 Survey Monument Specifications

Standard No. 4-010 Typical Subdivision Monuments

Standard No. 4-020 Survey Frame & Cover

Standard No. 4-030 Survey Monument and Placement

Standard No. 4-035 Survey Monument Stamping

The Contractor shall contact the City Surveyor prior to placing any Survey Monuments, and the City Surveyor will specify the Type of Monument(s) to be placed and will identify the location(s) where the Survey Monument(s) will be set.

For installation by the Contractor, the City Surveyor will provide the pre-stamped brass caps, and if required, the Frames and Covers. The Contractor shall provide all additional labor, equipment and materials necessary to install the Monuments.

The City Surveyor will record the Survey Monuments.

[405-1](#)

CONSTRUCTION SPECIFICATIONS

PART 500 - STRUCTURES

Section Title

COY

505	Concrete Structures	N/A
506	Precast Prestressed Concrete Members	506-1
510	Concrete Block Masonry	N/A
511	Brick Masonry	N/A
515	Steel Structures	N/A
520	Steel and Aluminum Handrails	N/A
525	Pneumatically Placed Mortar	N/A
530	Painting	N/A

SECTION 506 – PRECAST PRESTRESSED CONCRETE MEMBERS

SECTION 506.2 CONCRETE delete the third paragraph and replace with the following:

The compressive strength of the concrete will be determined from concrete test cylinders cured per ASTM C32/C31M-15, Standard Practice for Making and Curing Concrete Test Specimens in the Field.

[506-1](#)

CONSTRUCTION SPECIFICATIONS

PART 600 - WATER AND SEWER

Section Title	COY
601 Trench Excavation, Backfilling and Compaction	601-1
602 Trenchless or Open Cut Installation of Steel Casing	N/A
604 Placement of Controlled Low Strength Material	604-1
605 Subdrainage	N/A
607 Trenchless Installation of Smooth Wall Jacking Pipe	N/A
608 Horizontal Directional Drilling	N/A
610 Water Line Construction	610-1
611 Water, Sewer and Storm Drain Testing	611-1
615 Sanitary Sewer Line Construction	N/A
616 Reclaimed Water Line Construction	N/A
618 Storm Drain Construction	618-1
620 Cast-in-place Concrete Pipe	N/A
621 Corrugated Metal Pipe and Arches	N/A
625 Manhole Construction and Drop Sewer Connections	625-1
626 Corrosion Coating of Sanitary Sewer Manholes	N/A
627 Painting Sanitary Sewer Manholes with Insecticide	N/A
630 Tapping Sleeves, Valves and Valve Boxes on Water Lines	630-1
631 Water Taps and Meter Service Connections	631-1

SECTION 601 - TRENCH EXCAVATION, BACKFILLING AND COMPACTION

SUBSECTION 601.4.2 BEDDING delete subsection in its entirety and replace with the following:

Bedding is the material upon which a pipe is to be placed. The bedding material type shall be clean sand unless otherwise specified.

SUBSECTION 601.4.3 HAUNCHING delete the second paragraph and replace with the following:

Haunching material shall be clean sand. With Agency approval, an alternative granular material or CLSM may be used.

SUBSECTION 601.4.4 INITIAL BACKFILL delete subsection in its entirety and replace with the following:

601.4.4 BACKFILL: Trench backfill within City of Yuma rights-of-way may be obtained from trench excavation and should be clean and free from objectionable material. If clay, caliche, or rock is encountered in the trench excavation it shall be separated and removed and replaced with material meeting the backfill gradation requirements. All earth backfill shall be compacted to at least 95% of maximum dry density as measured by the Standard Proctor Method in accordance with the ASTM D 698. Water settlement is prohibited at all times as a method of trench backfill compaction. In place moisture density tests, concrete testing, ABC slurry testing, and asphalt testing shall be ordered by the Engineer to ensure that all materials comply with the specified requirements. Quality Assurance (QA) tests will be performed by approved materials testing laboratory with the cost paid for by the City of Yuma. Quality Control (QC) is responsibility of the Contractor.

For trench backfill above pipe bedding and below pavement section aggregate base course, the Contractor shall use clean material from trench excavation meeting the following gradation and PI requirements:

SCREEN SIZE	PERCENT PASSING
1 Inch	90-100
½ Inch	60-90
¼ Inch	30-70
#30	10-40
#200	<12

PI maximum of 2.

For pipe bedding to 6 inches over the top of the pipe the Contractor shall use clean sand backfill meeting the following gradation and PI requirements:

SCREEN SIZE	PERCENT PASSING
#4	100
#30	10-40
#200	<12

PI maximum of 2.

If re-compaction is necessary, additional tests shall be performed at the Contractor's expense. Re-testing costs shall be deducted from monies due or to become due the Contractor. The Contractor shall be required to fill all trenches that settle. If repaved areas settle, the Contractor shall perform all work necessary, at no additional cost to the City, to remove the asphalt, correct the settlement, repave, and re-stripe the affected trench locations.

The Contractor shall submit sand slurry mix designs, CLSM mix designs, concrete mix designs, and asphalt mix designs to the Engineer for approval. Submittal shall be at least 30 days prior to the incorporation of the materials into the work. The Contractor shall make plant facilities available in the event the Engineer elects to sample materials at the source.

Slurry placed as backfill shall be vibrated in place to provide consolidation and uniformity of the slurry material.

Imported sand bedding, embedment, cover, slurry, CLSM and backfill utilized for the waterlines and sanitary sewer lines construction shall not be measured and paid for separately.

SUBSECTION 601.4.5 FINAL BACKFILL delete subsection in its entirety

SUBSECTION 601.4.6 COMPACTION DENSITIES replace table 601-2 with the following:

TABLE 601-2
MINIMUM TRENCH COMPACTION DENSITIES

Backfill Type	Location	From Surface to 2 feet below Surface	From 2 feet below Surface to 1 foot above Top of Pipe	From 1 foot above Top of Pipe to Bottom of Trench
I	Under any existing or proposed pavement, curb, gutter, attached sidewalk, roadway shoulders, and other areas within right-of-way subject to vehicular traffic, or when any part of the trench excavation is within 2-feet of the existing pavement, curb, or gutter.	100% for granular 95% for non-granular	95%	95%
II	On any utility easement or right-of-way outside limits of Type I backfill.	95%	95%	95%
III	Around any structures (manholes, etc.) or exposed utilities outside limits of Type I Backfill.	95% in all cases		

SUBSECTION 601.4.7 WATER CONSOLIDATION delete this subsection in its entirety:

SUBSECTION 601.4.9 RIGHTS-OF-WAY BELONGING TO OTHERS delete subsection in its entirety and replace with the following:

Backfill and compaction for irrigation lines in other entity's right-of-way outside the limits of the Contracting Agency shall be accomplished in accordance with their permit and/or specifications.

SUBSECTION 601.5 CONTRACTOR CERTIFICATION OF INSTALLATION PROCEDURES delete the first paragraph in its entirety and replace with the following:

When requested in the Technical Specifications or by the Engineer prior to installation, the Contractor shall furnish to the Contracting Agency an affidavit (certification) from the pipe manufacturer (or his designee) stating that the Contractor is familiar with the manufacturer's suggested installation methods and procedures and the manufacturer's suggested installation methods and procedures are consistent with COY requirements.

[601-3](#)

SECTION 604 – PLACEMENT OF CONTROLLED LOW STRENGTH MATERIAL

SUBSECTION 604.1 DESCRIPTION delete this section in its entirety and replace with the following:

The work covered by this specification consists of furnishing all materials, labor and equipment for the placement of controlled low strength material (CLSM). The type of backfill to be used shall be as specified in the special provisions, plans or by the Engineer.

The following is a brief description of the types of CLSM and their intended uses:

1/2 SACK: General trench backfill in areas where future excavation into the backfill with conventional hand tools is anticipated or in areas of low loading such as streets, parking areas, behind retaining walls, etc.

1 SACK: General trench backfill and backfill behind retaining walls where additional strength is required above that of 1/2 sack CLSM, structural backfill under foundations and as thermal fill and/or mechanical protection of duct banks and conduits.

SECTION 610 – WATER LINE CONSTRUCTION

SUBSECTION 610.3 MATERIALS delete subsection in its entirety and replace with the following:

All pipes for water lines shall be of the classes shown on the plans or as specified below.

(A) Pipes sized 4-inches through 12-inches in diameter shall be PVC C900 or ductile iron, except where a particular material is specified by the City of Yuma or the contract documents. All pipes shall be minimum 235 psi design unless otherwise specified.

(B) Pipes sized 16-inches through 20-inches in diameter shall be AWWA C905, ductile iron when exposed or above ground.

(C) Pipes sized 20-inches and larger shall be ductile iron pipe.

Ductile iron water pipe and fittings per: Section [750](#). C900 PVC per: AWWA C900-12.

Service material containing brass or bronze must comply with the current NSF 61-8 standards at the time the project begins.

All brass or bronze service material must meet the current AWWA C-800 standards.

Any product used in water line construction containing brass or bronze that comes in contact with potable water shall meet the current NSF standards and federal law.

SUBSECTION 610.4.1 TRENCHING/COVER delete first three paragraphs in their entirety and replace with the following:

All water mains shall have a minimum cover of 42 inches over the top of the pipe.

SUBSECTION 610.4.3 BLOCKING AND RESTRAINTS delete subsection in its entirety and replace with the following:

All pipe lines, valves and fittings 16 inches and smaller in diameter shall be blocked with concrete thrust blocks in accordance with standard details. Thrust block areas for pipe, valves and fittings larger than 16 inches in diameter shall be installed per details shown on the plans. The areas stipulated in the standard details are minimums and shall not be decreased.

If irregular soil or pressure conditions are encountered, a thrust block design revision or an alternate joint restraint system may be required by the Engineer.

When restrained/welded joints are specified to resist thrust forces, The Engineer of Record must complete a Joint Restraint Calculator with 1.5 to 1 safety factor. If required restraint length cannot be obtained blocking is required.

[610-1](#)

SUBSECTION 610.5.5 EXTRA PROTECTION delete subsection in its entirety and replace with the following:

New water lines that require extra protection from new sewer lines shall have extra protection provided by using AWWA C909 PVC pipe for both lines. Lines of standard pipe length shall be centered at the point of crossing so that no joints exist within seven (7) feet horizontal and only restrained or mechanical joints exist within ten (10) feet horizontal.

New water lines that require extra protection from sewer lines shall have identification wrap and/or tape installed on the water and sewer lines for the length that requires extra protection for each line.

New water lines that require extra protection from existing sewer lines shall be constructed using the extra protection specified for new water lines, and the existing sewer line:

- (1) shall be reconstructed using a standard length of AWWA C909 PVC pipe centered at the point of crossing so that no joints exist within seven (7) feet horizontal and only restrained or mechanical joints exist within ten (10) feet horizontal, or
- (2) shall be encased in 6 inches of concrete for the horizontal distance of the line that requires extra protection but for a distance no less than ten (10) feet horizontal.

Existing water lines that require extra protection from new sewer lines shall provide for extra protection by:

- (1) constructing the new sewer line and reconstructing the existing water line using AWWA C909 PVC pipe for both lines with standard pipe lengths centered at the point of crossing so that no joints exist within six (feet) horizontal and restrained or mechanical joints exist within ten (10) feet horizontal, or
- (2) encasement of both the existing water line and the new sewer line in six (6) inches of concrete for the horizontal distance of the lines that require extra protection but for a distance no less than ten (10) feet horizontal.
- (3) Extra protection for existing ductile iron water lines can be met by the installation of restrained or mechanical joints on the existing water line within ten (10) feet horizontal of the crossing and either
 - (a) construction of new sewer line using a standard pipe length of AWWA C909 PVC pipe centered at the point of crossing so that no joints exist within seven (7) feet horizontal and restrained or mechanical joints exist within ten (10) feet horizontal, or
 - (b) encasement of the new sewer line in 6 inches of concrete for the horizontal distance of the line that requires extra protection but for a distance no less than ten (10) feet horizontal.

SUBSECTION 610.7 VALVES delete butterfly valves from this section

SUBSECTION 610.8 MANHOLES AND VAULTS delete cast iron steps from this section

SUBSECTION 610.10 COUPLINGS, JOINTS, GASKETS AND FLANGES delete subsection in its entirety and replace with the following:

Couplings: The couplings used to join the pipe to flanged valve adapters shall have a minimum working pressure of 150 psi, and shall have a fusion-bonded epoxy finish. The coupling sleeves shall be stainless steel Type 316 with a minimum yield of 30,000 psi. The flanges shall have a minimum yield of 30,000 psi and be stainless steel Type 316.

Joints: The joints and fitting shall conform to Sections [750](#) and [752](#).

Bolts and Nuts:

- (1) Bolts, studs, and nuts used in underground field flanged connections or for connecting fittings shall be minimum stainless steel Type 304. All bolt diameters shall normally be 1/8 inch smaller than the bolt hole diameter. All bolts shall be hexagonal heads.
- (2) The minimum requirement for underground mechanical joint connections using T-head bolts shall meet the requirements of AWWA C111 using a high strength stainless steel manufactured for atmospheric corrosion resistance per ASTM A242.

These bolted joints shall be protected as follows: Following installation and before backfilling, all couplings, steel flanges, bolts, nuts, anchor bolts and rods, bolting of all flanged valves, and all exposed steel shall be protected from corrosion by not less than 10 mils of polyethylene wrap or by the method outlined below.

Gaskets: Except as otherwise provided, all gaskets for pipe lines shall be one piece full faced gaskets from one-ply cloth inserted SBR rubber material. Gaskets for flanges 20 inches and smaller shall be from 1/16 inch thick material. Gaskets for flanges 24 inches and larger shall be from 1/8 inch thick material. Gasket material shall be J-M 109 as manufactured by Johns-Manville Corporation or an approved equal. Physical characteristics of the rubber compound shall meet ASTM D2000, Class 4AA805A13.

Flanges: Cast iron flanges shall conform to AWWA C-110 as to material, diameter, thickness, drilling, etc. Steel flanges shall be ring or hub type, and shall conform to AWWA C-207, Class D. All flanges shall be drilled and have flange diameters and bolt circles conforming to AWWA C-110, except bolt holes will be 1/8 inch larger than the bolts given for the various sizes. All bolts shall be as specified above and all flanges shall have a flat facing.

SUBSECTION 610.12 FIRE LINE SERVICE CONNECTIONS delete subsection in its entirety and replace with the following:

Fire line service connections shall be installed in accordance with standard details.

The fire line from the control valves at the main to the detector check valve shall be constructed of C900 PVC pipe. Any exposed pipe portion or at a proximity of 5' or smaller from the exterior face of the structural footing shall be of ductile iron.

SUBSECTION 610.13 METER SERVICE CONNECTIONS delete subsection (A) in its entirety and replace with the following:

(A) Schedule 40 PVC pipe shall be used to connect or extend service pipes.

SECTION 611 – WATER, SEWER AND STORM DRAIN TESTING

SUBSECTION 611.2.2 HYDROSTATIC TESTING (A) Pressure Testing delete subsection in its entirety and replace with the following:

- (A) **Pressure Testing:** Unless otherwise noted in the contract documents, the minimum prescribed test pressure shall be at least 150 psi for water system distribution lines and 200 psi for fire lines, not to exceed 5 psi over the minimum prescribed test pressure, as measured at the lowest end of the section under test. The duration of each pressure test shall be at least 2 hours, during which time the test section shall not drop below the minimum prescribed test pressure. If the pressure in the pipe test section has not stabilized by the end of the testing period, a hydrostatic retest will be required.

Each section of a new line between sectionalizing valves or between the last sectionalizing valve and the end of the project shall be tested separately as required in AWWA C-600, and/or as modified in these specifications, except that any such section less than 500 feet in length may be tested with the adjacent section, if both sections of line have the same pipe class rating. No section greater than 1/2 mile in total pipe length shall be tested without special written permission of the Engineer.

SUBSECTION 611.6 POST INSTALLATION INSPECTION OF NEW MAINLINE STORM DRAINS (A) Video Inspection: delete subsection (A) in its entirety

SECTION 618 – STORM DRAIN CONSTRUCTION

SUBSECTION 618.1 DESCRIPTION delete the second paragraph of this subsection in its entirety and replace with the following:

Installation of pipe in laterals of other agencies shall conform to the specifications and permit of the respective agency.

[618-1](#)

SECTION 625 – MANHOLE CONSTRUCTION AND DROP SEWER CONNECTIONS

SUBSECTION 625.2 MATERIALS delete subsection in its entirety and replace with the following:

Unless otherwise shown on the plans or specified in the special provisions, materials to be used shall conform to the following:

Concrete for cast in place sanitary sewer manhole bases shall be Class A, and for drop sewer connections shall be Class C, per Section [725](#).

Pipe used in sanitary sewer manholes or drop sewer connections shall comply with pipe requirements of Section [615](#).

Manhole frame and cover per Section [787](#) and cast in accordance with standard details. Manhole steps shall not be used.

SUBSECTION 625.3.1 MANHOLES delete subsection in its entirety and replace with the following:

Manholes shall be constructed of T-Lock lined precast concrete sections, polymer or cast in place concrete. The invert channels shall be smooth and semi-circular in shape, conforming to the inside of the adjacent sewer sections. Changes in direction of flow shall be made with a smooth curve, having a consistent radius as large as the manhole will permit with no angle points. Changes in size and grade of the channels shall be made gradually, evenly, and uniformly throughout the manhole base.

Invert channels may be formed of concrete having a smooth mortared surface, may be half tile laid in concrete, or may be constructed by laying full section of sewer pipe through the manhole and breaking out the top half after the surrounding concrete has hardened. The floor of the manhole outside the channels shall be smoothed and shall slope towards the channels.

The excavation shall be in such a manor, access is maintained around the manhole base before, during, and after placement of the manhole.

For cast-in-place manhole bases, a foundation of Class A concrete shall be constructed in accordance with the standard details and Section [505](#).

All machined surfaces on the frame and cover shall be such that the cover will lie flat in any position in the frame and have a uniform bearing through its entire circumference. Any frame and cover which creates any noise when passed over by automobiles shall be replaced. Frames shall be set firmly in a bed of mortar true to line and grade, all as shown on the plans and as called for in these specifications.

Backfilling shall be done in accordance with the requirements for trench backfilling as stated in Section [601](#).

SECTION 630 – TAPPING SLEEVES, VALVES AND VALVE BOXES ON WATER LINES

SUBSECTION 630.3.2 SPECIFIC VALVE SIZE REQUIREMENTS (B) delete subsection in its entirety and replace with the following:

(B) Valves 24 inches and larger:

Valves shall be for operation in the horizontal position and equipped with bronze tracks, rollers and scrapers. Valves shall have bevel gears. The gears and stuffing box shall be enclosed in a watertight iron case, for operation in a buried location. Bolts, nuts, studs, etc., used with the gear case shall be 304/316 stainless steel, and shall conform to the requirements for Bonnet Bolting in AWWA C-509, or AWWA C-515 for resilient wedge valves. The case shall be filled with grease to the factory.

By-pass valves shall be furnished and installed on each valve unless otherwise indicated on the approved plans. See Table [630-1](#) for by-pass valve sizes.

SUBSECTION 630.5 BUTTERFLY VALVES delete this subsection in its entirety

SECTION 631 – WATER TAPS AND METER SERVICE CONNECTIONS

SUBSECTION 631.1 DESCRIPTION delete subsection in its entirety and replace with the following:

This specification covers work by Contractors installing water services in new subdivisions by Permit and in projects under Contract. All the materials used shall comply with applicable standard specifications and the work performed in accordance with these specifications and the contracting agency's standard details. The service connections shall be complete and all material shall be furnished by the Contractor except for the water meter.

All water service connections shall be constructed of Schedule 40 PVC pipe.

All new subdivision water lines shall be staked for line and grade at 100 foot intervals by the Developer's Engineer prior to construction. All meter locations shall be staked by setting two stakes for line and marking one of the stakes for grade.

SUBSECTION 631.2 MATERIALS delete this subsection in its entirety and replace with the following:

All 1" and 2" service connections shall be constructed of Schedule 40 PVC.

SUBSECTION 631.3.4 POLYETHYLENE PIPE delete this subsection in its entirety

SUBSECTION 631.3.5 SERVICE TAPS delete subsection in its entirety and replace with the following:

One-inch and two-inch service taps to new meter mains shall be made with a service saddle. Connections 4" and larger require tapping sleeve and gate valve in accordance with the following provisions:

All wet taps must be made by the Mueller Type B-100 tapping machine or approved equal. A sharp tapping bit must be used in order to obtain clean sharp threads. In general, each tapping tool should be sharpened or discarded after making 6 taps.

The minimum distance between tapping sleeves, saddles, and tapped couplings shall be 3 feet.

CONSTRUCTION SPECIFICATIONS

PART 700 - MATERIALS

Section Title	COY
701 Aggregate	N/A
702 Base Materials	N/A
703 Riprap	N/A
705 Portland Cement Treated Base	N/A
708 Asphalt Pavement Core Bonding Materials	N/A
710 Asphalt Concrete	710-1
711 Paving Asphalt	N/A
712 Liquid Asphalt	N/A
713 Emulsified Asphalts Materials	N/A
714 Micro-surfacing Materials	N/A
715 Slurry Seal Materials	715-1
716 Cover Material	N/A
717 Asphalt-Rubber Asphalt Concrete	N/A
718 Preservative Seal for Asphalt Concrete	N/A
719 Polymer Modified Asphalt Concrete	N/A
725 Portland Cement Concrete	725-1
726 Concrete Curing Materials	N/A
727 Steel Reinforcement	N/A
728 Controlled Low Strength Material	N/A
729 Expansion Joint Filler	N/A
735 Reinforced Concrete Pipe	N/A
736 Non-Reinforced Concrete Pipe	N/A
738 High Density Polyethylene Pipe and Fittings for Storm Drain and Sanitary Sewer	738-1
739 Steel Reinforced Polyethylene Pipe & Fittings for Storm Drain, Irrigation & Sanitary Sewer	N/A
740 Polypropylene Pipe & Fittings for Storm Drain, Irrigation & Sanitary Sewer	N/A
741 Lining for Reinforced Concrete Sanitary Sewer Pipe	741-1
742 Precast Manhole	N/A
743 Vitrified Clay Pipe	743-1
744 Precast Polymer Concrete Manhole	N/A
745 PVC Sewer Pipe and Fittings	N/A
750 Iron Water Pipe and Fittings	750-1
752 Asbestos-Cement Water Pipe and Fittings	752-1
753 Galvanized Pipe and Fittings	753-1
754 Copper Pipe, Tubing and Fittings	754-1
755 Polyethylene Pipe for Water Distribution	N/A
756 Dry Barrel/Fire Hydrants	N/A
757 Sprinkler Irrigation System	N/A
758 Concrete Pressure Pipe - Steel Cylinder Type	N/A
759 Steel Pipe	N/A
760 Coating Corrugated Metal Pipe and Arches	N/A
761 Structural Plate Pipe, Arches, and Pipe Arches	N/A
770 Structural and Rivet Steel, Rivets, Bolts, Pins, and Anchor Bolts	N/A

771	Galvanizing	N/A
772	Chain Link Fence	N/A
775	Brick and Concrete Masonry Units (Blocks)	N/A
776	Masonry Mortar and Grout	N/A
778	Lumber	N/A
779	Wood Preservatives	N/A
787	Gray Iron Castings	N/A
790	Paint	N/A
792	Dust Palliative	N/A
795	Landscape Material	N/A
796	Geosynthetics	N/A

SECTION 710 – ASPHALT CONCRETE

SUBSECTION 710.3 MIX DESIGN REQUIREMENTS add the following:

A mix design may be included on the City approved product list for one year from the date the mix was formulated, sealed and signed upon approval by the Engineer. Approved mix designs may be used on City projects within the year of approval by submitting which mix design will be used on the project.

For use on a project after the one year period has expired, the contractor shall submit evidence that the type of bituminous material, the type of mineral admixture, and the source and methods of the producing mineral aggregate have not changed since the formulation of the approved mix design. The submittal shall also provide test results for the aggregates and the mix, to include; gradations and specific gravity of the coarse and fine aggregates, maximum theoretical (Rice) density, Marshall Data and void calculations at the optimum oil content. If the mix is still in compliance it will be approved for use on the project for which it was submitted.

SUBSECTION 710.3.1 GENERAL delete first paragraph and item (7) in its entirety and replace with the following:

The mix design for asphalt concrete shall be prepared by a laboratory that is accredited through the AASHTO Accreditation Program (AAP) in Hot Mix Asphalt Aggregates and Hot Mix Asphalt. The laboratory shall be under the direct supervision of a Civil Engineer, registered by the State of Arizona. The date of the design shall not be older than one year of submittal, unless supportive documentation is provided and approved by the Engineer.

(7) The results of all testing, determinations, etc., such as: specific gravity and gradation of each component, water absorption, sand equivalent, loss on abrasion, fractured coarse aggregate particles, Tensile Strength Ratio (ASTM D4867) or Compressive Strength of Bituminous Mixtures (ASTM D 1074) and Effects of Water on Compressive Strength of Compacted Bituminous mixtures (ASTM D1075), Marshall stability and flow, asphalt absorption, percent air voids, voids in mineral aggregate, and bulk density. Historical abrasion values may be supplied on existing sources. The submittal should include a plot of the gradation on the Federal Highway Administration's 0.45 Power gradation Chart, plots of the compaction curves and the results of moisture sensitive testing.

SUBSECTION 710.3 MIX DESIGN REQUIREMENTS add the following to Table 710-3:

5a Min. Dry Strength of 250psi per ASTM D1075

5b Min. Retained Wet Strength of 70% of the dry strength.

SECTION 715 – SLURRY SEAL MATERIALS

SUBSECTION 715.2.2 MINERAL AGGREGATE add the following:

City of Yuma Sweeper Sand can be used as long as the material meets the gradation requirements listed in table 715-1. Contractor will be responsible to clean the sweeper sand of all debris.

[725-1](#)

SECTION 725 – PORTLAND CEMENT CONCRETE

SUBSECTION 725.3 AGGREGATES delete first paragraph in its entirety and replace with the following:

Coarse and fine aggregate shall conform to the applicable requirements of ASTM C33. Coarse aggregate grading requirements shall conform to the appropriate rock size designation in the Grading Requirements for Coarse Aggregate, Table 3. Fine aggregate grading requirements shall conform to the Fine Aggregate Grading section.

SUBSECTION 725.6 MIX DESIGN PROPORTIONING add the following:

An approved mix design can be extended for an additional year from the date the mix was formulated, sealed and signed upon receiving supporting data from the approved laboratory, including but not limited to aggregate test results and concrete strength testing records not more the 24 month old. The mix design requires the signature of a registered professional engineer and will be reviewed in accordance with ACI 318 Chapter 5.

SUBSECTION 725.8.2 CONCRETE CYLINDER TEST delete first sentence in its entirety and replace with the following:

A cylinder strength test shall consist of three 6x12 cylinders or three 4x8 cylinders made from the same sample of concrete. One cylinder will be tested at 7 days and two will be tested at 28 days with the average result used as the 28-day strength result.

SECTION 738 – HIGH DENSITY POLYETHYLENE PIPE AND FITTINGS FOR STORM DRAIN AND SANITARY SEWER

SUBSECTION 738.1 GENERAL delete first paragraph in its entirety and replace with the following:

This specification covers the requirements of profile-reinforced and corrugated (Type S or Type D) high density polyethylene (HDPE) pipe manufactured per ASTM F894, AASHTO M-252 or AASHTO M-294 for gravity flow, low pressure storm drain systems. When noted on the plans or in the technical specifications, gravity flow, low pressure storm drains may be constructed using HDPE pipe. HDPE pipe may not be used for sanitary sewer system installations. For the purpose of this specification, low pressure is defined as the test pressures of 3.5 psi of air or 4 feet of water as specified in Section [615.11](#).

[738-1](#)

SECTION 741 – LINING FOR REINFORCED CONCRETE SANITARY SEWER PIPE delete
this section in its entirety

[741-1](#)

SECTION 743 – VITRIFIED CLAY PIPE delete this section in its entirety

[743-1](#)

SECTION 750 – IRON WATER PIPE AND FITTINGS delete this section in its entirety

[750-1](#)

SECTION 752 – ASBESTOS-CEMENT WATER PIPE AND FITTINGS delete this section in its entirety

[752-1](#)

SECTION 753 – GALVANIZED PIPE AND FITTINGS delete this section in its entirety

[753-1](#)

SECTION 754 – COPPER PIPE, TUBING AND FITTINGS delete this section in its entirety

[754-1](#)